

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
17 June 2004 (17.06.2004)

PCT

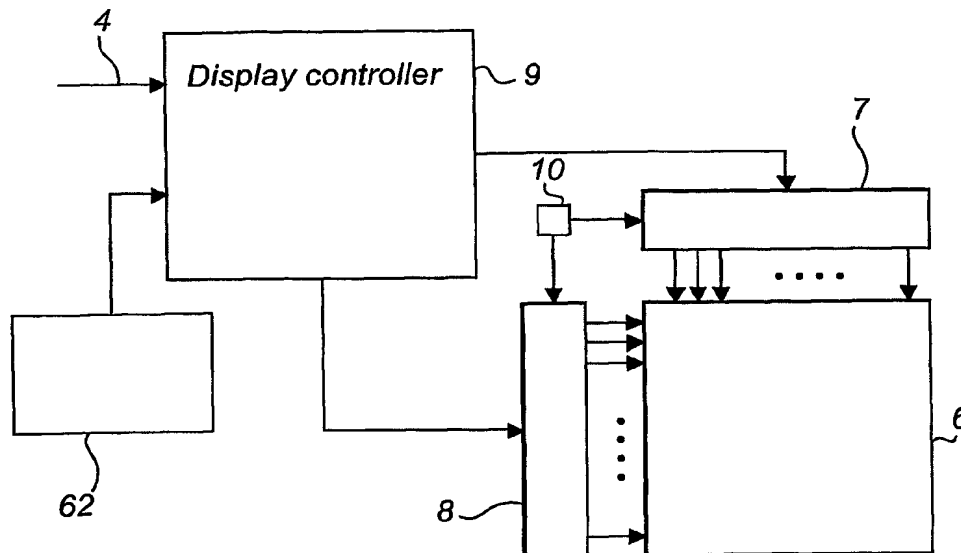
(10) International Publication Number  
WO 2004/051617 A2

536841

- (51) International Patent Classification<sup>7</sup>: G09G 3/32
- (21) International Application Number: PCT/TB2003/005466
- (22) International Filing Date: 27 November 2003 (27.11.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 02102679.4 4 December 2002 (04.12.2002) EP
- (71) Applicant (for all designated States except US): KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): GIRALDO, Andrea [IT/DE]; c/o Philips Intellectual Property & Standards GmbH, Weissshausstr. 2, 52066 Aachen (DE). JOHNSON, Mark, Thomas [GB/DE]; c/o Philips Intellectual Property & Standards GmbH, Weissshausstr. 2, 52066 Aachen (DE).
- (74) Agent: VOLMER, Georg; Philips Intellectual Property & Standards GmbH, Weissshausstr. 2, 52066 Aachen (DE).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: ACTIVE MATRIX PIXEL CELL WITH MULTIPLE DRIVE TRANSISTORS AND METHOD FOR DRIVING SUCH A PIXEL



(57) Abstract: A pixel cell in an active matrix display comprising a current driven emissive element such as an OLED (20) and a data input (17) for receiving an analogue data signal ( $V_{in}$ ). The pixel has at least two drive elements (12, 14), each being connected to a power supply (16) and arranged to drive the emissive element in accordance with the data signal, and selecting means (22, 24) for providing, in response to a select signal (21, 23), the data signal to at least one of the drive elements (12, 14). Further, each drive element is adapted to drive the emissive element (20) in a different drive current range in response to a given data signal. Thereby, a required brightness range can be obtained while data voltages too close to the threshold voltage may be avoided.

WO 2004/051617 A2